

Abstract of the Disclosure:

Transverse vibrations of the pellet columns included in the fuel rods of fuel elements are limited by elastically mounting the fuel rod jacket tubes in the mesh of spacer grids. When  
5 the fuel rods are supported in this way, flexural vibrations of a higher order occur that lead to damage to the jacket tubes caused by fretting. These vibrations are the less dampened the more rigid the fixture of the fuel rod is. These vibration conditions are more easily excited and more strongly  
10 dampened when the pellet columns are more mobile, thereby removing vibration energy from the fuel element and avoiding damage caused by fretting. The mobility of the columns can be increased by increasing the gap between the pellet and the jacket tube, or by using constructions in which a torque  $M \leq$   
15  $10 \text{ N mm}$  on the fuel rod leads to a tilting angle  $\phi \geq 0.1^\circ$ . For this purpose, the fuel rod can be retained in a mesh in such a manner that a distance  $d_0 \leq 10 \text{ mm}$  between the highest and the lowest point of contact of the fuel rod is maintained on the holding element of the mesh.